Question	Answer
13.	$m\angle 4 = 54°$, and $m\angle 8 = 54°$, so $\angle 4 \cong \angle 8$. $\ell \parallel m$ by the Conv. of the Corr. $\measuredangle$ Post.
15.	$m\angle 1 = 55°$, and $m\angle 5 = 55°$, So $\angle 1 \cong \angle 5$. $\ell \parallel m$ by the Conv. of the Corr. $\measuredangle$ Post.
19.	$m\angle 1 = 105°$, and $m\angle 8 = 105°$, so $\angle 1 \cong \angle 8$. $n \parallel p$ by the Conv. of the Alt. Ext. $\measuredangle$ Thm.
21.	$m\angle 3 = 75°$, and $m\angle 5 = 105°$. $75° + 105° = 180°$, so $\angle 3$ and $\angle 5$ are supp. $n \parallel p$ by the Conv. of the Same-Side Int. $\measuredangle$ Thm.
22.	**a.** Corr. $\measuredangle$ Post. **b.** Given **c.** Trans. Prop. of $\cong$ **d.** $\overline{BC} \parallel \overline{DE}$ **e.** Conv. of the Corr. $\measuredangle$ Post.
37a.	$\angle URT$; $m\angle URT = m\angle URS + m\angle SRT$ by the $\angle$ Add. Post. It is given that $m\angle SRT = 25°$ and $m\angle URS = 90°$, so $m\angle URT = 25° + 90° = 115°$.
37b.	It is given that $m\angle SUR = 65°$. From part **a**, $m\angle URT = 115°$. $65° + 115° = 180°$, *so* $\overleftrightarrow{SU} \parallel \overleftrightarrow{RT}$ by the Conv. of the Same-Side Int. $\measuredangle$ Thm.
38a.	**a.** $\angle 1 \cong \angle 2$ **b.** Trans. Prop. of $\cong$ **c.** $\ell \parallel m$ **d.** Conv. of the Corr. $\measuredangle$ Post.
39.	It is given that $\angle 1$ and $\angle 2$ are supp., so $m\angle 1 + m\angle 2 = 180°$. By the Lin. Pair Thm., $m\angle 2 + m\angle 3 = 180°$. By the Trans. Prop. of =, $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$. By the Subtr. Prop. of =, $m\angle 1 = m\angle 3$. By the Conv. of the Corr. $\measuredangle$ Post., $\ell \parallel m$.

© Houghton Mifflin Harcourt Publishing Company

Question	Answer
41.	The Reflex. Prop. is not true for ∥ lines, because a line is not ∥ to itself. The Sym. Prop. is true, because if $\ell \parallel m$, then ℓ and m are coplanar and do not intersect. So $m \parallel \ell$. The Trans. Prop. is not true for ∥ lines, because if $\ell \parallel m$ and $m \parallel n$, ℓ and n could be the same line. So they would not be ∥.
42.	Yes; by the Vert. ∡s Thm.; the ∠ that forms a same-side int. ∠ with the 55° ∠ measures 125°. $125° + 55° = 180°$, so the same-side int. ∡s are supp. By the Conv. of the Same-Side Int. ∡s Thm., $a \parallel b$.

© Houghton Mifflin Harcourt Publishing Company